Title (en)
METHOD AND DEVICE FOR DETECTING BRIGHT SPOTS ON IMAGE, AND COMPUTER PROGRAM PRODUCT

Title (de)
VERFAHREN UND VORRICHTUNG ZUR DETEKTION HELLER PUNKTE AUF EINEM BILD UND COMPUTERPROGRAMMPRODUKT

Title (fr)
PROCÉDÉ ET DISPOSITIF DE DÉTECTION DE POINTS BRILLANTS SUR UNE IMAGE, ET PRODUIT PROGRAMME D'ORDINATEUR

Publication
EP 3843034 A4 20210804 (EN)

Application
EP 18931064 A 20180822

Priority
CN 2018101818 W 20180822

Abstract (en)
[origin: EP3843034A1] A method and device for detecting bright spots on an image. The so-called image is acquired from a field of view where a base extension reaction occurs, multiple nucleic acid molecules with optically detectable labels exist in the field of view where the base extension reaction occurs, and at least some of the nucleic acid molecules appear as bright spots on the image. The method comprises: preprocessing the image to obtain a preprocessed image (S10); determining a critical value to simplify the preprocessed image to obtain a simplified image (S20); determining a first bright spot detection threshold c1 on the basis of the preprocessed image (S30); and identifying candidate bright spots on the image on the basis of the preprocessed image and the simplified image, including determining a pixel matrix that satisfies at least two of conditions a)-c) as a candidate bright spot (S40). The method can quickly and effectively implement accurate detection of bright spots on images, especially for images acquired from nucleic acid sequence determination reactions.

IPC 8 full level
G06T 7/00 (2017.01); **G06T 5/00** (2006.01); **G06T 5/20** (2006.01); **G06T 7/11** (2017.01); **G06T 7/136** (2017.01); **G06T 7/194** (2017.01); **G06T 7/73** (2017.01); **G16B 25/00** (2019.01)

CPC (source: EP US)
G06T 5/20 (2013.01 - EP); **G06T 5/70** (2024.01 - EP US); **G06T 5/73** (2024.01 - US); **G06T 7/0012** (2013.01 - US); **G06T 7/11** (2016.12 - EP); **G06T 7/136** (2016.12 - EP US); **G06T 7/194** (2016.12 - EP US); **G06T 7/73** (2016.12 - EP); **G16B 35/00** (2019.01 - US); **G16B 40/10** (2019.01 - EP); G06T 2207/20021 (2013.01 - EP); G06T 2207/20036 (2013.01 - EP); G06T 2207/30072 (2013.01 - EP)

Citation (search report)
- [I] EP 3306566 A1 20180411 - DIRECT GENOMICS CO LTD [CN]
- [A] US 2013165328 A1 20130627 - PREVITE MICHAEL [US], et al
- [A] JULIEN GHAYE ET AL: "Image Thresholding Techniques for Localization of Fluorescent Biomarkers", NIH PUBLIC ACCESS AUTHOR MANUSCRIPT, vol. 83, no. 11, 16 September 2013 (2013-09-16), pages 1001 - 1016, XP055428252, ISSN: 1552-4922, DOI: 10.1002/cyto.a.22345
- See references of WO 2020037573A1

Designated contracting state (EPC)
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EP 3843034 A1 20210630; **EP 3843034 A4 20210804**; US 11847766 B2 20231219; US 2021217177 A1 20210715; WO 2020037573 A1 20200227

DOCDB simple family (application)
EP 18931064 A 20180822; CN 2018101818 W 20180822; US 201817270413 A 20180822